

## CONTENTS OF VOLUME 35

### *Numbers 1 & 2*

#### **Special Issue on Responses of Marine Organisms to Pollutants—Part 2**

<i>Editorial</i>	iii
<i>Session Chairs</i>	v
<i>Contents</i>	vii

#### **SECTION 6: METALS AND METAL BINDING PROTEINS**

Crustaceans as Models for Metal Metabolism: I. Effects of the Molt Cycle on Blue Crab Metal Metabolism and Metallothionein DAVID W. ENGEL & MARIUS BROUWER (USA)	1
Crustaceans as Models for Metal Metabolism: II. Induction and Characterization of Metallothionein Isoforms from the Blue Crab ( <i>Callinectes sapidus</i> ) DANIEL SCHLENK, AMY H. RINGWOOD, THEA BROUWER-HOEXUM & MARIUS BROUWER (USA)	7
Crustaceans as Models for Metal Metabolism: III. Interaction of Lobster and Mammalian Metallothionein with Glutathione MARIUS BROUWER, THEA BROUWER-HOEXUM & ROBERT CASHON (USA)	13
Applications of Directly Coupled SE-HPLC/ICP-MS in Environmental Toxicology Studies: A Study of Metal-Ligand Interactions in Cytoplasmic Samples A. Z. MASON & S. D. STORMS (USA)	19
Control of Metallothionein Expression by Hormones and Stressors in Cultured Fish Cell Lines DAVID BURGESS, NICK FRERICHS & STEPHEN GEORGE (UK)	25
Effect of Cadmium Pre-Exposure in Cadmium Accumulation by Brine Shrimp <i>Artemia</i> : Involvement of Low-Molecular-Weight Cadmium-Binding Ligands J. DEL RAMO, M. MARTÍNEZ, A. PASTOR, A. TORREBLANCA & J. DIAZ-MAYANS (Spain)	29
Age-Specific Differences in Cadmium Sensitivity and Bioaccumulation in Bivalve Molluscs AMY HUFFMAN RINGWOOD (USA)	35
Effect of Selected Inhibitors on Cadmium, Nickel, and Benzo(a)pyrene Uptake into Brown Cells of <i>Mercenaria mercenaria</i> G. ZAROGIAN, P. YEVICH & S. ANDERSON (USA)	41

Effects of Cadmium Exposure on the Ultrastructure of Hepatopancreatic Cells of <i>Thais haemastoma</i> (Gastropoda, Prosobranchia)	47
M. REMEDIOS RUBIO, PEDRO TINEO, JAVIER DIAZ & AMPAR TORREBLANCA (Spain)	
Cytosolic Redistribution and Enhanced Accumulation of Cu in Gill Tissue of <i>Littorina littorea</i> as a Result of Cd Exposure	53
JOSEPH R. GULLY & ANDREW Z. MASON (USA)	
Identification of Sites of Cu Accumulation and Turnover by Stable Isotopic Ratio Analysis	59
A. Z. MASON & J. R. GULLY (USA)	
Uptake and Elimination of Tributyltin in Fish-Yolk-Sac Larvae	65
KARL FENT & JUDITH HUNN (Switzerland)	
Effect of Sublethal Exposure to Mercury in the Biochemical Composition of Hepatopancreas in <i>Procambarus clarkii</i> during the Recovery after Starvation	73
A. TORREBLANCA, J. DEL RAMO & J. DIAZ-MAYANS (Spain)	

#### SECTION 7: STRESS PROTEINS AND OTHER BIOCHEMICAL MARKERS

A Brief Perspective on the Heat-Shock Response and Stress Proteins	79
LAWRENCE E. HIGHTOWER (USA)	
Are the Stress Proteins Indicators of Exposure or Effect?	85
BRIAN P. BRADLEY (USA)	
Induction of HSP70 Proteins in Mussels by Ingestion of Tributyltin	89
SCOTT A. STEINERT & GEORGE V. PICKWELL (USA)	
Bioindicators of Contaminant Exposure and Sublethal Effects in Benthic Fish from Puget Sound, WA, USA	95
JOHN E. STEIN, TRACY K. COLLIER, WILLIAM L. REICHERT, EDMUNDO CASILLAS, TOM HOM & USHA VARANASI (USA)	
Biological Markers in Fish: DNA Integrity, Hematological Parameters and Liver Somatic Index	101
J. M. EVERAARTS (The Netherlands), L. R. SHUGART, M. K. GUSTIN, W. E. HAWKINS & W. W. WALKER (USA)	
Interactive Effects of Pentachlorophenol (PCP) and Hypoxia on the Energy Metabolism of the Mussel <i>Mytilus edulis</i>	109
W. X. WANG & J. WIDDOWS (UK)	

#### SECTION 8: IMMUNOTOXICOLOGY

In-vitro Lymphocyte Response of Bottlenose Dolphins ( <i>Tursiops Truncatus</i> ): Mitogen-Induced Proliferation	115
GARET P. LAHVIS, RANDALL S. WELLS, DAVE CASPER & CHARLES S. VIA (USA)	

*Contents of Volume 35*

369

Effects of Polycyclic Aromatic Hydrocarbons on the Lymphocyte Mitogenic Responses in Spot, <i>Leiostomus xanthurus</i> . . . . .	121
MOHAMED FAISAL & ROBERT J. HUGGETT (USA)	
Inhibition by Pentachlorophenol of Production of Reactive-Oxygen Intermediates by Medaka Phagocytic Blood Cells . . . . .	125
ROBERT S. ANDERSON & LISA L. BRUBACHER (USA)	
Effects of Laboratory Exposure to Sediments Contaminated with Polycyclic Aromatic Hydrocarbons on the Hemocytes of the American Oyster <i>Crassostrea virginica</i> . . . . .	131
SUSANNE SAMI, MOHAMED FAISAL & ROBERT J. HUGGETT (USA)	
Neuroendocrine Marker Expression on Sea Urchin Coelomocytes and Other Immunoregulatory Parameters May be Used to Monitor Environmental Changes . . . . .	137
AURELIA M. C. KOROS (USA) & ANN PULSFORD (UK)	

**SECTION 9: REPRODUCTIVE TOXICOLOGY AND REPRODUCTION**

Effects of Cadmium on Gonadotropin Secretion from Atlantic Croaker Pituitaries Incubated <i>In Vitro</i> . . . . .	141
PETER THOMAS (USA)	
Binding of Xenobiotics to the Estrogen Receptor of Spotted Sea-trout: A Screening Assay for Potential Estrogenic Effects . . . . .	147
PETER THOMAS & JOHN SMITH (USA)	
Inhibition of Ovarian Microsomal Aromatase and Follicular Oestradiol Secretion by Imidazole Fungicides in Rainbow Trout . . . . .	153
GILLES MONOD, AMÉLIE DE MONES & ALEXIS FOSTIER (France)	
Effects of Malathion on Steroidogenesis and Sex Reversal in <i>Monopterus albus</i> . . . . .	159
HANUMAN SINGH (India)	
Contaminant Effects on Reproductive Success in Selected Benthic Fish . . . . .	165
LYNDAL JOHNSON, EDMUNDO CASILLAS, SEAN SOL, TRACY COLLIER, JOHN STEIN & USHA VARANASI (USA)	
A Field Study of the Relationship between Bioindicators of Maternal Contaminant Exposure and Egg and Larval Viability of English Sole ( <i>Parophrys vetulus</i> ) . . . . .	171
TRACY K. COLLIER, JOHN E. STEIN, HERBERT R. SANBORN, TOM HOM, MARK S. MYERS & USHA VARANASI (USA)	
Fish-Embryo Toxicity Associated with Exposure to Soils and Sediments Contaminated with Varying Concentrations of Dioxins and Furans . . . . .	177
K. R. COOPER, J. SCHELL, T. UMBREIT & M. GALLO (USA)	
Passage of Xenobiotics and Their Metabolites from Hepato-pancreas into Ovary and Oocytes of Blue Crabs, <i>Callinectes sapidus</i> : Possible Implications for Vitellogenesis . . . . .	181
RICHARD F. LEE (USA)	

Characterizing the Annual Reproductive Cycle of <i>Mytilus edulis</i> from Boston Harbor and Cape Cod Bay—a Comparison by Means of Stereology and Condition Indices . . . . .	189
---	-----

DEIRDRE M. KIMBALL & ANNE E. MCELROY (USA)

<i>Abstracts</i> . . . . .	197
----------------------------	-----

#### Number 3

Effects of Tributyltin and Dibutyltin on the Physiological Energetics of the Mussel, <i>Mytilus edulis</i> . . . . .	233
--	-----

J. WIDDOWS (UK) & D. S. PAGE (USA)

Effects of an Oil Spill on Some Organisms Living on Mangrove ( <i>Rhizophora mangle</i> L.) Roots in Low Wave-Energy Habitats in Caribbean Panama . . . . .	251
---	-----

S. D. GARRITY & S. C. LEVINGS (USA)

Fate and Effects of Dispersed Crude Oil Under Icy Conditions Simulated in Mesocosms . . . . .	273
---	-----

R. SIRON, E. PELLETIER (Canada), D. DELILLE (France) & S. ROY (Canada)

#### Number 4

San Pedro Shelf California: Testing the Pearson–Rosenberg Model (PRM) . . . . .	303
---	-----

D. MAURER, G. ROBERTSON & T. GERLINGER (USA)

Organic Matter Composition and Pollutant Enrichment of Sea Surface Micro-layer Inside and Outside Slicks . . . . .	323
--	-----

F. GARABETIAN, J.-C. ROMANO, R. PAUL & J.-C. SIGOILLOT (France)

The Genotoxic Disease Syndrome . . . . .	341
--	-----

B. KURELEC (Croatia)

Effects of Ultraviolet-B Radiation on Primary Production along Latitudinal Transects in the South Pacific Ocean . . . . .	349
---	-----

M. BEHRENFELD, J. HARDY, H. GUCINSKI, A. HANNEMAN, H. LEE & A. WONES (USA)

Announcement . . . . .	365
------------------------	-----

Contents of Volume 35 . . . . .	367
---------------------------------	-----

